

NOTES

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National Collegiate Meet at Los Angeles, California, was

NATIONAL COLLEGIATE TRACK COACHES ASSOCIATION

called to order, at 9:30 o'clock a. m., Saturday, June 23,
at the

1934, by Coach [Name] of the University of Southern
1934 NATIONAL COLLEGIATE MEET
California.

LOS ANGELES, CALIFORNIA

Reports of the Treasurer and the Nominating
Committee were made (contents of which may be obtained by
addressing the Secretary). 1934-1935 officers nominated
and duly elected as follows:

SHOT PUT

POLE VAULT State

440 & 880

President: Dean [Name]
Vice-President: H. J. [Name], University of Georgia
Secretary: E. P. Johnson, Drake University
Treasurer: Karl Schindeman, Washington State College.

Retiring officers:

President: Dean Crowell, University of Southern California

Vice-president: [Name], University of Michigan

Secretary: E. P. Johnson, Drake University

JUNE 23, 1934

Treasurer: Clyde Littlefield, University of Texas.

NATIONAL COLLEGIATE TRACK COACHES ASSOCIATION

Discussion led by Frank Anderson, Texas A and M.

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President: Ralph Young, Michigan State

Vice-President: H. J. Stegeman, University of Georgia

Secretary: F. P. Johnson, Drake University

Treasurer: Karl Schlademan, Washington State College.

Retiring officers:

President: Dean Cromwell, University of Southern California

Vice-president: Charles Hoyt, University of Michigan

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There has to be lift, and there has to be push. In order to get lift in any event, I believe we have to keep our heads up. That is true in all of them. If we don't, we will finish with bent knees, or bent hips.

We have to look at the implement as it leaves our hand, regardless of whether it is the shot or the javelin.

PUTTING THE SHOT

Discussion led by Frank Anderson, Texas A and M.

COACH ANDERSON : We are all here to learn what we can and I don't mind you tearing me to pieces, because I probably will know a little more about the shot put after you get through with me.

What I can say about the shot put won't take a long time. Three-quarters of an hour, or half an hour won't be taken up unless you gentlemen take most of it.

I do have a few ideas in the shot put that are orthodox all right, but it is an event that has improved wonderfully in the last few years, and I expect the competition rather than coaching is responsible for much of the improvement. But there may be something in the change of methods in it.

I believe that in all events good form is an economy of effort; not to waste anything, but to put it all in line and get all your pounds where they belong.

We have to use our bodies mechanically correct, as far as the muscle set-up is concerned. The shot is heavy. Our leg muscles are powerful. Our back muscles are powerful. We have to throw those in there first, in order to get up the momentum of going across straight.

There has to be lift, and there has to be push. In order to get lift in any event, I believe we have to keep our heads up. That is true in all of them. If we don't we will finish with bent knees, or bent hips.

We have to look at the implement as it leaves our hand, regardless of whether it is the shot or the javelin.

We have to turn it loose with the arm, the hand, the wrist and the fingers after the big muscles have done the work completely, or nearly as completely, as possible.

In other words, when we have gone across and have used the body and the leg to get all the drive possible, and the implement is as far forward as we can get it, and as high up as we can get it, the arm and hand go into play.

I have a shot putter who has had an awful hard time to keep from putting the shot too soon. Probably you gentlemen have had the same trouble. He wants to reverse before his weight has traveled to the front of the circle sufficiently. Some want to reverse with too much weight on the right foot, and to start the reverse with the weight on both feet equally distributed, which I think is very wrong. At that time the left hip is not as far forward as it should be, and the weight hasn't gone as far forward as it should.

So what I think about the shot is, in a few words, to go across in line from low or medium crouch, to high, big muscles first, delaying the throw as long as you possibly can, before any reverse comes in, and then at that time, bring the shoulder around.

Roughly, that is the foundation, as I see it, of shot putting. Now, let's have the exact positions of the feet, hands, arms, and everything else.

These vary with men. I do believe, though, that we ought not be tight. Probably the one control of that is to let the left arm loose, and not straighten it out. It might be a kind of a control to relax the left arm there. It might relax the body for the kill.

is sinking all the time while hopping across, going down, and

Ask me anything and I will ask somebody else to answer it.

Let's go!

COACH CROMWELL: Continuity of the movement of the body at the time the glide is started from the back of the circle, when the weight is on the right leg and the left leg starts forward -- it seems to me we have quite a bit of trouble with the stoppage of motion momentarily from the preliminary swing of the left leg instead of continuing that on in a forward motion, at the time the hop is started.

COACH ANDERSON: I don't know whether I get that, Dean, exactly or not, but here is what occurs to me when you say that.

I have shot putters that take their hop and then land sinking. They don't land ready to throw; they land up, and then go down too much. I don't know whether that is what you mean or not.

COACH CROMWELL: That is it exactly.

COACH ANDERSON: Jumping, stopping, and starting over again. I don't think they ought to land and sink. There ought not be rear motion fighting forward motion. I think the back swing, which is not with the arm, but more with the body in this event ought to be completed during the hop and before the forward swing, regardless of whether it is golf, the javelin, or the shot. It should not be jerky. I don't think we ought to land sinking and fighting against ourselves. That is one trouble that I have had with my men.

FROM THE FLOOR: I think if you look at the slow motion pictures you will see on that hop the right shoulder is sinking all the time while hopping across, going down, and

then as the right foot is planted, the shoulder is still sinking, but by the time the left hits, it should be at the bottom and start up immediately. I don't know, but it seems to me that a great many, because of that stopping, getting too much kick with the swinging leg on the start of the hop, brings the left leg up too high and delays the left leg getting on the ground. It doesn't seem to hit soon enough and, therefore, the shoulder is down and stops before it starts up.

hip movement I don't think it is a case of leaning back too far. Too much depends on the swing of the left leg on the hop instead of pushing off from the rear leg. When you swing that left leg it does go up into the air to a certain extent and that means it is going to take that much longer to get down.

the direct COACH SCHULTE: It might be another way of agreeing. The point is that for the shot putter to overcome the hang or delay in the middle he should get the rear hip at least 6 or 8 inches ahead of the rear foot in the second position. In other words, you have the rear hip 6 or 8 inches in front of the rear foot when you land in the putting position. Then you cannot hang. But if your hip is over the foot and slightly behind it, there will be a decided hang.

that is COACH ANDERSON: In other words, don't jump with your feet and leave the hips back. The hips should lead your body. *to stop that sliding through with the hips, instead of*

lifting COACH SCHULTE: I would say at least 6 inches, preferably 8 inches, ahead of the foot, should be a minimum.

stop you COACH ANDERSON: Then you have your momentum, plus a continued push, to give this impetus.

COACH CROMWELL: Have you had trouble with a movement of the hips as the feet land, where the left leg is not braced enough?

We all know that you do not want that left knee straight, because that makes a distinct stoppage of the drive, which Coach Anderson has described so accurately. We do not want that left knee braced solid, but at the same time you want enough of a brace there to prevent a continuation of a hip movement forward.

It seems to me one of the most serious things we have is standing so that as you look at your shot putter, right straight at him and watch the hips, and if those hips are making any perceptible movement, continuing forward in the direction in which you put the shot before the lift is made, you have gone a long way to kill your put.

We have had considerable trouble with that.

COACH ANDERSON: Would you mind stating that again?

COACH CROMWELL: When you get the left foot coming down quickly and in a putting position, if the hips continue on instead of bracing enough so you lift from the right side, using those muscles, just the way as you described, if that is done, it causes trouble. We have had shot putters that have done that. We have fought with them two or three years to stop that sliding through with the hips, instead of lifting when they get there. They don't seem to brace themselves enough with the left leg. And yet we know you can't stop yourself with the left leg or you have killed the whole thing.

When you put the shot before the lift is made, you have gone a long way to kill your put.

COACH SCHLADEMAN: I have found it a good idea to watch the left leg. If I watch the knee and make a boy get that line straight up through the knee, which is advanced 6 or 8 inches over the hip, he will get over his hip trouble. You will get a straight drive right off the right foot. I think to have the knee out is important.

COACH JOHNSON: What do you mean by having the knee out?

COACH SCHLADEMAN: When a man hits, you have that knee turned out to the left with the hip advanced getting the straight line from the foot through the knee to the hip.

I think the knee is the point you must watch in order to get good results.

COACH NICHOLSON: In this connection, in connection with what Karl said, the last 6 weeks we had a boy go from 46 to 51 feet, and this thing did it.

All last year I looked at the boy and I said "You look tied up. I don't know what it is, but you are too tight."

That wasn't it at all. We found out he jumped too far across the circle with his feet too close together. This right foot had a tendency to point slightly forward, meaning that the hip was slightly forward. I kept working on it, and one day I said, "That is it. Put the right foot slightly back, which would bring the knee back." Then he began to come right away.

COACH ANDERSON: Don't you think the feet ought to be turned out slightly, (away from each other)? That is one fault we might watch for all of us. They have probably all been doing it, turning the toes outward a little bit, both

I have a feeling that they want to take a decided stance in for the push on the back leg and the lift on the front leg at the middle, or front of the circle. Don't you think so? I the proper time.

FROM THE FLOOR: You say the toes should turn outward?
ward?

COACH ANDERSON: Isn't that desirable? It seems to me, if you want to go forward, that you ought to point your toe forward, but not straight forward of course.

In the case of the front foot, you get a little more foot leverage and lift. It seems to me it would be better to turn those toes out. However, the right leg will be in a poor position with the knee and toe out very much, if the putter lands from the hop with a wide spread.

Henry, what do you think about jumping clear across the circle? How much of the circle should you use? What do you recommend using?

COACH SCHULTE: They usually use more than they should use. I would recommend as little as you possibly can, probably two-fifths of it, is about right, but they will always have clear up to four-sevenths of a circle, or some-

where in there. COACH ANDERSON: Isn't that desirable? It seems to me, if you want to go forward, that you ought to point your

COACH ANDERSON: As a rule then, how much do you think they ought to leave in inches?

In the case of the front foot, you get a little more foot leverage and lift. It seems to me it would be better to turn those toes out. However, the right leg will be for their finish. (that is, have two-fifths of the circle to in a poor position with the knee and toe out very much, if the the rear of the right foot after the hop has been made). foot putter lands from the hop with a wide spread.

I think most shop putters land in the front of the circle with their feet too close together. That is because the circle? How much of the circle should you use? What do they have been taking too much of the circle to begin with. you recommend using?

COACH ANDERSON: That picture shows it best. We can look at that. That is a cracker-jack picture illustrating the middle, or front of the circle. Don't you think so? I would like to be disagreed with, because I am curious about following his put, according to the picture, rather than with the whole matter.

COACH ANDERSON: What do you think? Should a man jump with his left foot clear to the board?

COACH SCHULTE: That depends on the man. Take a big man, he wouldn't have room enough in the circle, or couldn't get his legs in there very well; while a shorter man might have a little extra room, if he wanted it. I think somewhere between those two types of men you will find the average, which would leave a little bit of play from the toe board, with your left foot forward so as to give you room to rotate your foot as you come across, because you swing it around and swing it back, without hitting the board too much.

QUESTION: What does this fellow Lyman do? Some one might tell us how much room he takes and what he does.

COACH ANDERSON: There is a good picture of his finish in one of the papers this morning, which shows that he is well forward in making that put and that the arm action has been delayed until his body is facing front and weight is shifted well forward. He is forward and high and turning to his left.

QUESTION: Don't you think all shot putters, especially inexperienced shot putters, are putting foot reverse in there that is entirely too early and valueless? Isn't a foot reverse the same sort of action as you get with a pole vaulter after he gets over the bar, which is simply a completion of a thing, coming down, and the reverse comes after the shot

COACH ANDERSON: That picture shows it best. We can look at that. That is a cracker-jack picture illustrating that one point, because he is not reversing. His reverse is following his put, according to the picture, rather than with it. (Exhibiting picture.)

FROM THE FLOOR: You might be interested to know that this man Douda, of Czechoslovakia, doesn't have a reverse at all. He comes across the circle so fast that it and hardly by. Some bring it back and throw him on that right foot. He puts the shot without any reverse.

FROM THE FLOOR: Hershfold did the same thing.

FROM THE FLOOR: That is common among the European putters. It appears that after the throw is completed they simply bring the right foot forward, to catch themselves, up to the toe board so they are in the position of the right foot to the right and the left foot to the left.

It is my contention that if he would increase his speed across there that he would have to get his reverse or he would fall out of the circle.

COACH JOHNSON: Isn't that all the reverse is good for, just to keep from falling?

FROM THE FLOOR: Exactly. That is the point. The shot put is completed when the reverse starts, in fact, when the shot leaves the hand, when the right foot is a few inches off the ground, and the rest of it is simply a stop and nothing else.

Every high school kid you see insists on using the reverse. Nine out of ten coach the reverse first, and believe not being driven in a straight line.

You will find that the trouble is further back than

that is the basis of all putting, and so they do a lot of dancing in there which doesn't mean a thing. It looks nice, but it doesn't mean anything.

QUESTION: I would like to ask one question about the shoulder: I notice a lot of shot putters don't get the shoulder around at all, hardly at all, at least the Stanford boys, most of them, I think, don't. They are a good illustration of that. They simply come along in a straight line and hardly bring it around at all. Some bring it back and then forward.

What has been your experience? I am wondering about that shoulder. Some of them not only dip it down, but around.

COACH EDMUNDSON: I might say, in that connection, that I had a sad experience with a boy. Right now he would be putting that shot a long ways except for the fact that in high school he brought his shoulder way around. He had gotten into that habit and he couldn't change it.

He had been putting the shot around 48 feet, and dropped down to practically 43 feet. The shot, instead of going straight, would come around with a circular motion and he lost his power.

I think one of the greatest secrets of shot putting is to keep the shot moving in a straight line. Whenever you put a curve into it of any kind, it won't go as far.

COACH CROMWELL: I think Coach Edmundson is absolutely right on that. When you have trouble with the shot getting off in the wrong direction, it is getting off of one side of the hand, either left or right, because the shot is not being driven in a straight line.

You will find that the trouble is further back than

the actual placing of the fingers in the shot. That tends to make a curve, and that is the reason that the shot gets away.

If we go back far enough and correct the fault, I think you will always find that the shot is not being driven straight. There is a reason for it, and the reason is not in the actual holding of the shot in the fingers; in other words, if you brought your shoulders too far you would have to throw, in order to get it in a straight line, more over your head, if you get your shoulder too far out.

Did you have any kind of a dropping of the shoulders on Herman Brix?

COACH EDMUNDSON: Yes.

COACH CROMWELL: Did he put his shoulder back at all? Did he pull back his right shoulder at the start of his hop, or as he landed in the circle was there a dropping?

COACH EDMUNDSON: A dropping as he started.

COACH CROMWELL: A dropping at the start.

I don't think that has been settled yet, that question of the interval of the left and right foot.

If this left foot gets down like this (indicating) with too much interval between the left and right foot, it is impossible for the shoulder to get down, and they get a rocking chair motion that throws the shot in front of the circle before they are ready to drive with the left foot.

COACH JOHNSON: In contrast to your objection to that style, we have the style that Rhea used. He landed with his right foot and there was a long interval before his left foot landed, and after he landed his shoulder dropped way down. Isn't that right, Henry?

COACH SCHULTE: Yes

COACH JOHNSON: And I have had it said to me many times that that is the way the shot is going to be put in future years.

COACH CROMWELL: The question is, did it show the drop after his left foot came down or not?

COACH JOHNSON: I don't think so. After his left foot dropped he went from there immediately.

COACH SCHULTE: I attempted to get his left foot down earlier, and he couldn't do it. I am inclined to think he was a little bit late with his left foot. I am also inclined to think most shot putters fail to use the terrific powers of the transverse muscles of the torso. I think too much faith has been put into the idea of getting a body whip in the early part of their drive.

That is the thing I have attempted to get in Rhea, but I got a little delay of his left foot, which I think was probably detrimental to it. There were times when he got it well, and other times when he didn't do so well, because he was holding the left foot up too much.

COACH SCHLADEMAN: May I ask, did Rhea put the shot considerably higher?

COACH SCHULTE: No, a little bit lower.

COACH SCHLADEMAN: Through that body turn?

COACH SCHULTE: Not a body turn, but a body whip. The shoulder reverse is delayed as much as possible.

QUESTION: Mr. Anderson, I don't know whether we are ready for the next point or not, but I would like to hear some discussion on the height of the elbow.

COACH ANDERSON: Let's talk about the elevation of the shot a little bit. Coach Bresnahan let's hear from you on that.

COACH BRESNAHAN: In the past I made the mistake of having the shot putters put a little too low. I have been working on them to elevate the elbow a little, and have found that they functioned a little better. The Stanford men have the right hand pretty well down, the shot at a 45 degree angle,

as well as COACH ANDERSON: Do you have the forearm pointing in line with the departure of the shot?

COACH BRESNAHAN: Oh, yes.

COACH ANDERSON: It is just a matter of lowering the elbow or raising the elbow in the line of the departure of the shot?

COACH BRESNAHAN: Yes.

COACH ANDERSON: You feel now they have been putting the shot a bit too low?

COACH BRESNAHAN: I am hoping for a little discussion; I don't know whether I have the right slant on it or not. I have had some success with it; yes.

My feeling is that the point of the elbow and your wrist decide the angle at which you are shooting. If you are going to shoot high, straight up, you put your point right under it. If you put it on a straight line, you put it on a straight line. The point of the elbow should be at the angle at which you are putting.

COACH ANDERSON: We all agree that that is the line of departure of the shot, but where are we going from there? What do you think about that, Henry, about the elevation?

COACH SCHULTE: Isn't 45 degrees supposed to be correct in throwing, or is it 38 degrees? I am inclined to

think that in shot putting a man can get his force best by going across the circle and finishing practically out of the circle with his directions considerably lower than required for distance. In fact, I am inclined to believe that it might be 34 degrees or 35 degrees instead of 38 degrees.

COACH JOHNSON: Isn't that because a man isn't built to utilize his energy in putting the shot at a 45 degree angle, as well as he can do it at a lower angle?

COACH SCHULTE: He can put it out much further lower than he can high, so there must be somewhere a happy medium between the highest point and the greatest amount of power that you can put into it.

COACH SCHLADEMAN: Doesn't that depend on the physical build of the individual? For instance, this big Greek, (Theodoratus), has a very low forearm, and he raises his elbow up or he can't put at all, because he has to carry the shot in here (indicating below collar bone). Then he has to put it out in this direction in order to get the straight drive. He can't put it as the Stanford men over the right side.

I will illustrate what I think is about the height of the elbow (illustrating). This Greek boy couldn't put that way at all, on account of his physical build.

COACH JOHNSON: The Stanford putters have a different shoulder motion too, I think.

COACH SCHLADEMAN: Yes.

COACH CROMWELL: John Kuck used to put the shot holding it down here on the shoulder (illustrating). He had a stiff right wrist and got most of his drive holding the shot just down on his right shoulder. John went to the

extreme, but he was all right because he could prove it. Perhaps the boys who have stiff right wrists can do that.

COACH JOHNSON: I have always had the idea that the closer a man could approach a put, where the trajectory was about 40 degrees from the ground, the better put he could make. Is that your opinion?

Maybe we could find out from these coaches if that is the right way, if that is the thing we want to approach, or if that is too high.

COACH ANDERSON: I have always felt that 35 degrees was high enough.

COACH EDMUNDSON: I think so. If you watched the shot men yesterday, the best men, and those who had the best record, put it at a comparatively low angle. Several of those throws didn't get off the sod, and the men tied themselves up and had a poor finish, and no follow through at all. They were standing straight and were not able to lean out and follow the shot.

COACH JOHNSON: Could not they put it better if they could put it higher?

COACH EDMUNDSON: Possibly so, but I never saw a man that could. There was always something that made it impossible to get the drive in there and get that strength.

COACH JOHNSON: Then we are back to the imperfect mechanism of the human body.

COACH EDMUNDSON: For my own information, I called in a member of our department of physics and also an orthopedic surgeon. The physicist tells me it is difficult to figure out with any particular individual just what the exact angle is, but it ranges from 45 degrees to 38 degrees, as far as he

where the shot putter is standing to where the shot lands, you has been able to compute. That corresponded with what the orthopedic surgeon told me of the function of the muscles.

QUESTION: Where should the shot land, in a straight line, to the right or the left?

COACH ANDERSON: I should think if he deviated either way it might be a little better to the left rather than the

right. That is an opinion of mine, or course. If you are going to put the shot, it seemed to me it ought to be straight ahead, but maybe a little shift might be a little better than straight ahead.

COACH SCHULTE: It would seem to me that unless you got the shot directly off the back foot, either let it go to

the left or to the right, then you are not getting all the leverage that is possible, so apparently it means that a straight line is the best.

COACH ANDERSON: If it was over to the right or left, which one would you suggest?

COACH SCHULTE: Probably slightly to the left.

COACH CROMWELL: There is one place where I can disagree with you most heartily.

I think you will find that nine out of ten of the good putters put to the right rather than the left. I have never yet seen a good shot putter that went to the left of center.

The good ones are the ones that are driven so hard from the right leg, with such a good lift of the body, putting into

play those muscles that Henry Schulte was telling about. It

isn't in a straight line, but a little bit to the right, but that is in a straight line from where you start to where you drive. And if you take a steel tape and put it right from

where the shot putter is standing to where the shot lands, you will find it is a straight line, driven the way the human body is made.

COACH SCHULTE: Your eyes are in a radius to the put. You are going to get more power in this direction than you are if there is any deviation to the left, because then you begin to cross over here, and crossing from the chest, and you certainly are taking away power the instant you do that.

COACH SCHULTE: I don't think I disagree with what you said at all. I think we are arguing as to what a straight line is. It certainly is from the ball of the right foot through the shoulder, through the arm, through the hand, in line with the shot. And if you get to the right or left of that, I think you are wrong.

COACH CROMWELL: Then you begin working with the cure that Coach Edmunson was telling about?

COACH ANDERSON: I think we are not apart. Don't you think you will find that the line of the shoulder will be slightly off to the right when you land in most cases?

COACH SCHULTE: You are talking about the same thing that he (Coach Cromwell) has been talking about. That is, you are talking about the shoulder line in the middle of the circle.

COACH ANDERSON: I am talking about the shoulder line in front of the circle when you have landed. I believe it is a little to the right.

COACH SCHULTE: He would have to pull it to the left to get that straight again.

COACH ANDERSON: That is what I mean.

COACH CROMWELL: The question has been raised, what do you do with the eyes? Do you blindfold them, or have them look at a certain place, or have them do some special thing with the eyes?

COACH SCHULTE: Your eyes are in a radius to the put.

COACH CROMWELL: I think so.

COACH SCHULTE: I think in the old days the shot putters put their head back too far.

COACH CROMWELL: Some do now.

COACH SCHULTE: I think the head should be kept naturally looking at the shot and still not way back. I think a lot of shot putters ten years ago brought their heads back with a jerk and lost a lot of distance for that reason.

COACH CROMWELL: Undoubtedly.

QUESTION: I would like to ask one question, and that is in connection with the use that may be made of the left arm in the reverse. I would like to know if any emphasis is laid on the use of the left arm in assisting the reverse?

I have a notion that some of them emphasize that to the point of over-doing it. Some of them pull back with the left shoulder in order to help assist in bringing the right around, and it throwsthem out of line. I just wonder how much emphasis there should be on that.

COACH ANDERSON: I don't know. My opinion would be to work your right and let the left alone. I don't know about that. Don't stick it out, just let it lie loose and let it along.

Can anyone use the left arm to any advantage, more so than not to use it at all?

Just don't hinder yourself with the use of it is my opinion.

FROM THE FLOOR: Chairman Anderson, if you will watch Lyman today you will see where his left arm comes back. It

almost comes here (indicating) and then there is a snap. All you do is bring this arm in here and watch the shoulder snap.

COACH ANDERSON: Don't you think that is a coordinated snap rather than an intentional snap?

FROM THE FLOOR: I think if you will go back you will find most of the western shot putters, like Bud Houser, worked on that.

COACH ANDERSON: That was as an intentional part of the form?

FROM THE FLOOR: He worked on that when he was putting.

COACH ANDERSON: That is something I haven't thought about.

Let's hear from Coach Schlademan on that.

COACH SCHLADEMAN: I think that you handicap yourself when you put emphasis on that. That left arm comes back naturally. You get what might look like a snap if it comes behind the body. But it certainly is a handicap. I think that picture rather shows it.

COACH ANDERSON: If there is something good in the left arm, we would like to get it. I think we ought to stick to the essentials as much as we can and not try to teach these boys too much.

QUESTION: One more question, about the carrying of the shot. It varies with each individual. Do you think it is better to work it out towards the end of the shoulder or in? Which would you strive for generally?

COACH ANDERSON: I think there has been a tendency to work it out.

COACH EDMUNDSON: In this respect, I have answered that question from an experience that I had.

In the first place, you are working shot putters that have had experience, and some that have had loss. Those that have had little experience you have to start that shot pretty close to the neck. Later they can bring it out to the shoulder.

You have talked about a good many things here that are for the champion. You can't teach them all of everything the first day. I think that is one of the things that should be developed later. Develop some of these fundamentals that are really fundamentals to begin with, and this will come later.

COACH ANDERSON: Any other questions before we drop the shot put?

QUESTION: Don't you think in shot putting you should bring the shot higher above the ear after the start of the put than the old time shot putters, who used to put straight away and under?

COACH ANDERSON: Correct.

COACH CROMWELL: In other words, the present day shot putters are driving it the way it should be driven, exactly the way Coach Anderson said when he started the discussion. They are using the biggest and strongest, and most powerful muscles that we have, starting with the leg muscles. They are not dropping their arm and getting down under and then doing like that (illustrating), such as they did 20 years ago. They are using the big muscles as the driving muscles.

That is absolutely correct.

QUESTION: I would like to ask one question: Is there any particular emphasis placed on breathing? I have heard it said by some coaches that a deep breath at the beginning of the start of the put, or when just ready to go across the circle, and then to expel the breath rather forcibly at the end of the

put is a good idea. Is there any reason to place any emphasis on that at all, or does it come naturally?

COACH ANDERSON: I believe every shot putter takes a good strong breath just before he goes across, and I think it tends to make his body a little stronger, and probably he will grunt loud or expel the air forcibly as he reverses, but that part of it I think has just the same amount of drive in it as the reverse properly used. In other words, the shot is gone.

COACH SCHULTE: Isn't it quite logical that the man who expels his breath does that after the shot is put? I don't believe you can expel breath while putting the shot and put the shot worth a damn.

If you have ever watched a back-woodsman swing an axe, after he has put the power behind the axe, he lets out a little explosion, that sounds like the exhaust of a big Ford, but that has nothing to do with the force of the blow of the axe.

COACH CROMWELL: I think, taking your breath before the shot is put, is a splendid method also for relaxation. It gets those tense muscles relaxed as well as getting the body set for the supreme effort, a two-fold purpose.

COACH ANDERSON: Gentlemen, I just feel like I must turn this discussion back to President Cromwell, as far as the shot put is concerned. We don't want to take too much time on one subject.

Thank you very much. (Applause)

POLE VAULT

Discussion led by Dean B. Cromwell, University of So. Calif.

CHAIRMAN CROMWELL: I think at this time we are ready to talk about the pole vault. We are not going to spend much time on the subject. We will then talk about the runs.

I had asked the coach of Yale University, George Commors, who for many, many years has had the best pole vaulters, to come up here and not only lead the discussion, but to carry it on and not let anyone else say anything.

But he said he wouldn't do that, so if he refuses we will try to get along without George doing all the work.

There is very little that I can tell you from my knowledge of pole vaulting, more than it certainly is an event requiring the ability of all the other events: The strength of the upper body is essential, speed in the legs is certainly essential, timing and balance are very important; so if you have a very good gymnast that is able to handle himself well in the air in tumbling and gymnastics, and if you have one that is a good sprinter, if he has spring in his legs so as to be a very good broad jumper, and an excellent high jumper, you likely will have a fair performer in the pole vault.

We have found that is an event requiring all those essentials, and one must capitalize on speed down the runway, and the lifting of the body while in the air.

Any one thing that will stop the upward flight of the body as it leaves the ground will very much decrease the height of the vault. Therefore, you do not want to do anything at the time you leave the ground that is going to take away any

of the momentum obtained while the vaulter goes down the runway carrying the pole.

If speed is an essential, then the runner should face forward while he is running with the pole. If he is facing forward he must carry the pole at his side.

All jumpers use a shift of the hands, bringing the hands fairly close together at the time the pole is planted in the box. It is impossible to carry a vaulting pole with the hands close together. Therefore, they must be carried sufficiently far apart to enable the jumper to carry it with ease, and yet attain full speed in his sprinting.

There is no sense in having an extreme distance between the hands in carrying the pole, because it is more difficult to shift hands when they are far apart, than when they are a reasonable distance apart. We have had boys come to us who carried their hands very far apart.

I suppose you gentlemen once in ten years have had a high school boy that made the take off from the wrong foot. I have no method, nothing to suggest, only that you immediately correct it and take off from the proper one. If he is right-handed, of course the take off is made from the left foot.

Now if the runner goes down to the point of take-off to plant the pole in the box, and does not want to do anything in any way that will retard the upward lift of the body through the air, it means that there musn't be any jerk at the time the jumper leaves the ground. If there is not going to be any jerk, it means that the take-off must be made at the proper point.

That take-off point does not want to be too close to

the standards, neither does it want to be too far away. If it is too far back, it limits your vault almost entirely to a swing of the body over the cross bar, getting you away from the gain of leaving the ground smoothly.

To my mind, the ideal point is one drawn by a straight line, a plumb line, which would be found by elevating the hands on the vaulting pole with the pole in the box and the two hands fairly close together above the head, and a plumb line drop of those two hands to the back of the head, down the back and to the heels.

I have my vaulters stand with their feet together, not standing on one foot, but with their feet together, elevating the hands. That is the point we use for the take-off. We spend considerable time in getting that point of take-off, very accurately.

In training we have them work on hurdles and finish with some jogging. When they jog I have them carry the vaulting pole around the track, especially in the early season.

If the jumper is of average size, we put low hurdles 17, 18, 19 yards apart, instead of the orthodox 20. There is no need of over-developing the stride, making your jumper run over low hurdles at a space of 20 yards apart just because the distance of the race is 20 yards, the idea being that you must positively develop a uniform stride for the vaulter.

And when all is said and done here this morning, perhaps that is the most important thing that we have, the uniform stride and the proper point of take-off. A vaulter may be deficient in very many things, but if he has the proper point of take-off and can attain his best speed as he goes down to plant the pole in the box, he may become a good man.

At the time the upward flight is started from the ground, there

is no effort at all made to jump. It is not a jump, because that would cause a jerk when he leaves the ground. The right leg, if he is a right-handed vaulter, continues on as in the broad jump. That is, he is not trying to do any more than continue his run with the vaulting pole when the pole is in the box.

We have had vaulters who have made a very good take-off, gotten off the ground smoothly and midway in the flight up to the cross-bar they would push the pole away from them. Such an action would instantly kill any chance of leverage that I mentioned first. The pole must be kept close to the body.

Some coaches stress straightening the arms, directly above the head, at the take off, when the pole is planted. Others have a slight bend to the elbow cushioning the take-off when the jumper leaves the ground; a slight bend of those arms.

If the jumper is going to elevate himself to the height he must do these days, there is certainly a definite point on the pole which the jumper can hold and no higher. There is a definite point on that pole and just as soon as your jumper begins to give any perceptible jerk as he leaves the ground, he is probably holding too high. The former world's record holder, Lee Barnes, held 11 feet 6 inches and no higher.

QUESTION: May I ask a question? Do you mean 11 feet 6 inches from the top of the box, or the bottom of the box?

CHAIRMAN CROMWELL: 11 feet 6 inches with the pole in the box.

QUESTION: That was about 12 feet, or 12 feet 1 inch?

CHAIRMAN CROMWELL: That is right. That was the

top of his hand. That would make the bottom of his hand 11 feet 6 inches. He tried to hold 12 feet, but he always let his hands slide down the pole.

QUESTION: What is the average?

CHAIRMAN CROMWELL: The average good vaulter will hold between 11 feet and 6 inches and 12 feet.

COACH CONNORS: That is about right. I think Carr was one of the best vaulters I ever saw, and he had about everything you could think of, and he was very clever in his vault from the box. He never took more than about 11 feet and 6 inches to 12 feet at the most. I think he was the most finished vaulter I have ever seen.

CHAIRMAN CROMWELL: Yes, sir, one of the most finished vaulters that ever lived undoubtedly.

QUESTION: Who was that?

CHAIRMAN CROMWELL: Sabin Carr. If there ever was an artist, he was one. His every vault was a work of art. The highest he ever held was 12 feet, and it was from there to 11 feet 6 inches.

You will find many small boys that cannot hold, even with the top of their top hand, 11 feet 6 inches and get off the ground smoothly.

I think now we are ready for a general discussion.

COACH LITTLEFIELD: When you make that first swing of your leg, is it straight or out to the right? That is, taking the left footed vaulter?

CHAIRMAN CROMWELL: It is straight.

QUESTION: Will you make one point clear? Some of

COACH CONNORS: I don't think I can give you that exactly.

the gentlemen don't understand about the measurement of that pole. They think it is when the pole is in the box; in other words, they think it is 11 feet 6 inches from the ground. You didn't mean that, did you; you meant from the end of the pole, did you not?

CHAIRMAN CROMWELL: From the end of the pole down in the box.

QUESTION: In other words, you could measure your pole on the ground and take it right from the end of the pole, in order to get it?

CHAIRMAN CROMWELL: Yes.

COACH SCHULTE: I am ashamed, but I haven't got that straight yet. It was from the top of the box, not the end of the pole?

CHAIRMAN CROMWELL: From the end of the pole.

The easiest way to do it, is to put up a cross bar at 11 feet 6 inches, put your pole in the box and let it lean up against the cross bar, and at the point where that cross bar hits your vaulting pole, make a mark, and if the top of his hand hits that mark, I think he holds 11 feet 6 inches on his vaulting pole.

COACH JOHNSON: Do you have your men grasp with both hands together?

CHAIRMAN CROMWELL: No.

COACH CONNORS: Some average 6 inches or 8 inches apart, and some are right up close.

COACH SCHULTE: Do they start elevating the arms two strides from the take off, or more?

COACH CONNORS: I don't think I can give you that exactly.

I think A. C. Gilbert knows more about pole vaulting than the majority of people. He was down there every chance he could get with these vaulters, and he was very strict on keeping the pole straight, right up straight, and not to leave the pole too quickly. You can't get your push if you leave too quickly.

QUESTION: Where do you think the take-off should be, right under the point or a little further back?

COACH CONNORS: I should say about 14 (?) feet back from the pit, and then come right up straight that way and swing up. Some swing up quicker than others. If you swing up too quickly, you will spoil it. It is a gradual up and then your push.

I got a letter once from a boy named Roy Thompson. He was at St. Paul's school and had corresponded with me. He was coming to Yale the next year, and he had always vaulted off the wrong foot, and the coach told him not to change, and not to do a thing until he got down there. He picked it up within a month, and he was all right.

CHAIRMAN CROMWELL: Corrected it as quickly as all that?

COACH CONNORS: Yes.

QUESTION: Dean, in what part of the striding does that pole start forward?

CHAIRMAN CROMWELL: At what part of the stride?

QUESTION: Yes.

CHAIRMAN CROMWELL: Two strides before you reach the take off box.

Is that what you use, George?

COACH CONNORS: Just about. Different fellows have a different mark.

CHAIRMAN CROMWELL: Yes, it would vary slightly, but the average would be two strides.

COACH CONNORS: According to the length of the stride. Some stride six feet and some seven.

CHAIRMAN CROMWELL: Yes.

QUESTION: I would like to ask you to explain the way you approach the take off. I didn't quite believe that the take off would be a line from the hands down to the heel. I have never had any success with a boy doing it that way. When it comes to the toe, a line dropping from the hands down to the toe, it is more nearly correct.

CHAIRMAN CROMWELL: Many coaches have found this to be a satisfactory method.

QUESTION: I have a very small boy. He is 5 feet 5½ inches tall, and his take-off, the only place he can get his rise, is probably 7 inches back from that line. If he is any closer he flips over all the time.

CHAIRMAN CROMWELL: I had one of these little fellows too. A great deal depends on their style of running and their speed.

QUESTION: Does the difference between these two come from the fact that you say the hands should not be quite together, that you drop a plumb line from the back of the top hand to the heel, and he says to the toe. He may be drawing that plumb line from the center of the swing, which would be in here (indicating).

CHAIRMAN CROMWELL: That might be so.

COACH SCHULTE: You are doing the same thing, but from different points.

CHAIRMAN CROMWELL: We do not stress getting the hands tight together. We let them shift them where they like. There is usually a 6 inch space in between. I am talking about the extreme back part of the upper hand, which would be the thumb part of the upper hand.

COACH SCHULTE: That would put it to the same point.

QUESTION: I have one other question that I would like to have discussed, and that is the length of the pole.

I have done some experimenting myself this Spring, and the best results I have ever got were with a pole that was just long enough for the grip. In other words, I would use a $12\frac{1}{2}$ foot pole if the grip was 12 feet.

A long pole comes up over the shoulders and puts him out of line, and does not work so well. A short pole comes right in under with the drive. With a long pole it puts him out to the right and there is apt to be a little rotation there.

CHAIRMAN CROMWELL: Another perfectly finished vaulter was Fred Sturdy, of Yale. He was 6 feet 1 or 2, wasn't he George?

COACH CONNORS: 6 feet 2, I think.

CHAIRMAN CROMWELL: He weighed 145 pounds stripped, and had about his best success with a pole of uniform thickness, rather light in weight. He did not need an extremely heavy one, due to the fact he only stripped 145 pounds. I think he had his best success with an 18 foot pole.

He told me he liked an 18 foot pole, and then if he

wanted to saw a foot off one end or the other, he would do that, but at the same time he always used a long pole, as I remember.

COACH CONNORS: Yes.

CHAIRMAN CROMWELL: I think it depends altogether on the stride. I know Walter Christie, at California, many times had good vaulters who would use the top hand right on top of the pole. It is entirely an individual proposition.

COACH CONNORS: The boys keep changing with times. Of course, in the old days, when we used the old ash pole, we had to have them long, 18 feet, because of the fact that if it was not so heavy at the end, you couldn't handle them. That was why we had long poles.

I remember at that time they were vaulting about 11 feet 5, and we had a dauce of a time getting poles, because when they broke, they would just break sideways, and they were very dangerous. Then when they got the bamboo pole, of course, that made a difference.

QUESTION: I wonder if some of the coaches could tell a little about this new aluminum pole?

CHAIRMAN CROMWELL: Have any of you gentlemen used the aluminum pole? They are made in St. Louis, aren't they?

COACH SCHULTE: I had two very poor pole vaulters this year. They were absolutely atrocious, but they did like the aluminum pole tremendously. We got one three weeks before the end of the season, and they liked it.

I think there is something to the aluminum pole because of the definite consistency of the pole. They are lighter, if anything, than the better grade of cane pole.

CHAIRMAN CROMWELL: Any trouble with breaking?

COACH SCHULTE: No, we have had no difficulty with them. They fall on the concrete and have had all sorts of bad falls, and have not been damaged. I think they are perfectly safe.

QUESTION: What if they break?

COACH SCHULTE: All they do is bend over.

COACH CONNORS: Instead of getting the lift, they jab the pole into the ground. They were breaking them all last season, because of the tendency to jab with them.

QUESTION: What is the price of those poles?

COACH SCHULTE: About nine dollars. I think, however, a pole like that might be used for six or eight years. For instance, Kansas is now using the same pole that Jimmy Bausch vaulted on.

They are very serviceable and satisfactory. The average cane pole is hard to balance. You have difficulty getting a balance, and when you do get a good pole you find it has different sides. If you turn one side forward you get a faster swing, than if you use the other side. Also, they warp and lose their effectiveness.

How many have been able to use a vaulting pole more than a year? Occasionally I get a good pole, but not very often.

These poles ought to be effective when they get them polished up, and get the fine results that they promise. When they get them ready, I think they will be marvelous.

CHAIRMAN CROMWELL: There is one in the meet today.

COACH SCHULTE: I imagine that is Kansas' vaulter's.

QUESTION: There is one question that I would like

to ask: I wonder if the general practice is still to leave that long heavy wooden peg in at the end, or do most of them saw that off and just use a joint?

CHAIRMAN CROMWELL: We always saw the lower end of the pole off and wrap it with tape, or one strand of wire.

It is not necessary to have the heavy wooden peg in the vaulting pole. Just saw that off and merely wrap the end. In many cases it is not necessary to even do that.

QUESTION: May I ask about the position of the body in going over the bar? Should it be jack-knife or sideways?

CHAIRMAN CROMWELL: Several years ago we entirely discarded what was known as the old jack-knife, whereby the knees were elevated up above the bar and brought down on the other side, still holding on to the pole, with the stomach right across the bar, and they trying to get away from the bar, the idea being that you would hit it with any part of your leg, from your feet to hips, or any part of your body, from hips to tips of your fingers and displace it. We found better success in driving off from the pole rather than holding on as with the old style jack-knife, that was in vogue some ten years ago.

QUESTION: I would like to ask the question about the run. What has been the experience of men regarding the approach? Should it be fast or graduated, fast all the way, or graduated?

COACH CONNORS: Let them come with all the speed they have. They have to in order to get this spring for the vault.

COACH SCHULTE: Do you advocate a jump or a spring at the take-off, just as he is leaving?

COACH CONNORS: Yes, a spring.

COACH SCHULTE: There seems to be a divergence of opinion between the two of you there.

CHAIRMAN CROMWELL: Well, George is right; I am wrong. I didn't hear what he said, but anything he said is correct.

COACH CONNORS: That is why this boy Kieth Brown high-jumped way over 6 feet. That is where he gets his lift.

COACH SCHULTE: In other words, he springs from the ground?

COACH CONNORS: Yes, he comes right up. It isn't a jump, it is a kind of a throw up.

COACH ANDERSON: Is there no crouch of any kind? Is it kind of a foot lift rather than a jerk?

COACH CONNORS: Yes.

QUESTION: In regard to the methods of avoiding the slap. I know of two or three, but I would like to know some more. What do you do about slapping the thigh or knees with the pole?

CHAIRMAN CROMWELL: Don't you think that that always comes from an incorrect take-off, either too far back or too close?

COACH CONNORS: It is due to the fact that your last step was too long. That is the reason.

CHAIRMAN CROMWELL: You nearly always find that the correction in the take-off will correct a slapping of the leg or body against the pole.

COACH SCHULTE: The last two strides are the same length, an elongated stride, as in the high jump?

CHAIRMAN CROMWELL: Right.

COACH ANDERSON: If you stand directly behind your pole vaulters the pole will be over the right shoulder, or will it be over the head?

COACH CONNORS: It will come right straight up. That is why if you go back or forward you can see whether the boy is swinging. If he is swinging that throws him over.

COACH ANDERSON: Then he should shift to where he is slightly in front of it and not over the right shoulder?

COACH CONNORS: That is right.

COACH ANDERSON: If you will get behind them you will find most of them vaulting over the right shoulder. I don't know whether that should be eliminated or not.

CHAIRMAN CROMWELL: Any other questions, gentlemen, before we take up the next subject? I think this has been very well covered.

COACH LITTLEFIELD: How often do you jump them?

CHAIRMAN CROMWELL: For form twice a week.

COACH LITTLEFIELD: How high?

CHAIRMAN CROMWELL: Any height that gives them form.

COACH SCHULTE: Some vaulters drive terribly hard the last three strides or so.

CHAIRMAN CROMWELL: Yes, they do.

COACH SCHULTE: Is that to be advocated?

COACH CONNORS: Some boys come very fast; others have not the speed to come so fast. There is no average boy. I don't think you can teach any two boys alike.

We have one boy who did 14 feet three or four different times, and he never had any speed to speak of at all.

He just didn't seem to get any speed at all.

FROM THE FLOOR: It occurs to me that there is some merit in the last stride, that is, as he is going up, which permits a man to gather in there for the hand shift and for the lift which, in some degree is comparable to that of the running broad jump.

CHAIRMAN CROMWELL: I think it is there, whether we know it or not.

PRESIDENT CROMWELL: I think that is enough, gentlemen. Our time is limited.

We will now go into the 440 and 880, with Coach Karl Schlademan, of Washington State leading the discussion.

There are three things that are fundamentally necessary for middle distance men. They are, (1) condition, which is a matter of training, of course, and adapting the training to the man and his type; (2) timing, and (3) form.

Now, a man will either be the sprinter type in his running form, or he will be the distance type of runner, and that will vary the timing considerably. We have had one great middle distance runner in the northwest, Eddie Gemung, of Washington, who was a little bit different in his form. Now, (Schlademan) what would you call him? He was a distance runner type, wasn't he?

I would like to have him talk a little bit about Eddie Gemung, and tell us something about him. I think that will illustrate that type of running better than any other way I know. If you will tell us something about him, his, and how you got him into condition, I think it would be interesting.

DISCUSSION OF 440 AND 880 YARD RUNS

Discussion led by Karl Schlademan, Washington State College.

CHAIRMAN SCHLADEMAN: In working middle distance runners, I have found two or three things that are absolutely necessary. I am going to name those and then merely lead the discussion and call on some of the men here who have had great middle distance runners to tell how they have been handled.

In the first place, I figure that you can classify the middle distance runners into two types, the sprinter type and the distance runner type. And there are two types of work necessary for them.

There are three things that are fundamentally necessary for middle distance men. They are, (1) condition, which is a matter of training, of course, and suiting the training to the man and his type; and (2) timing, and (3) form.

Now, a man will either be the sprinter type in his running form, or he will be the distance type of runner, and that will vary the timing considerably. We have had one great middle distance runner in the northwest, Eddie Genung of Washington, who was a little bit different in his form. Hec, (Edmundson) what would you call him? He was a distance runner type, wasn't he?

I would like to have Hec talk a little bit about Eddie Genung, and tell us something about him. I think that will illustrate that type of running better than any other way I know. If you will tell us something about him, Hec, and how you got him into condition, I think it would be interesting.

COACH EDMUNDSON: Eddie Genung was a half-miler, but he ran a pretty good quarter. He was on the Olympic team two years ago.

I start the men out early in the year by doing over-distance altogether and start very easy with them. When they first come out they jog a little, and then walk a ways, and jog a little again, walk again, and do that for a couple of weeks. Then, of course, we do straight running but I am an advocate of over-distance for all runners early in the season. As soon as they get over their first leg soreness, I begin giving them some straight work and some work off the marks.

As the season gets along and they get in pretty good shape, I seldom send a man on much over-distance. A half-miler I seldom work more than three-quarters of a mile, and that at a comparatively easy rate. That is usually the first of the week. And in the middle of the week, either Tuesday or Wednesday - I prefer Wednesday - I give them a 660. Early in the season I try to make this 660 as fast as they can run it. After they are in shape the 660 is run in this matter: The first quarter at exactly the same pace as they expect to run the first quarter in competition, and the last 220 is then built up as they would naturally build up the last 220 in a half-mile.

I think it is necessary to develop some speed and some sprinting in the half-mile run and a quarter occasionally. In our particular Conference it is necessary that they run a quarter in the relay because we have a limited number of men.

Occasionally they may run a 220, and 50 yards and a hundred, to build up their speed. Very briefly, that is the method I proceed with.

CHAIRMAN SCHLADEMAN: I use practically the same type of training that Coach Edmundson does, except that I have found that toward the end of the year even 660 yards is too far. I haven't gotten good results when I have used the 660. Maybe it is because I got my men a little bit over the top. But I rather like to use the quarter mile. I have found that running a 220 at a pace, resting a little bit, and then running another 220, according to the style that Cunningham has used for training for the mile, running a quarter, resting a little bit, and running a quarter again.

I wish that you would ask questions. I think that is the quickest way to bring these things out.

COACH EDMUNDSON: I might say in that connection, that you have two problems if you are going to bring a boy along for a meet like this, (N.C.A.A.) and you know he is a champion. The chances are if he runs in dual meets he would not be in the best condition, what you would call top.

Then you have another group that you know are going to be through after the Conference Meet. They are naturally going to work harder anyway, and they are going to be in good condition early in the season. But there is always that fear of taking a kid over the top, which is a tough proposition.

Of course, if you know the kid is good, he will get along on a little less work, and he doesn't really work as hard as the kids that aren't as good. They are trying a little

harder to keep up. He may run 660 with the rest of the crowd and not be putting out as much effort.

CHAIRMAN SCHLADEMAN: I would like to ask a question for my own information. Have you men here found that with the distance running type of quarter miler that cross country in the Fall is harmful or helpful?

COACH JOHNSON: I think it is distinctly helpful. I have found it that way.

QUESTION: Did you say the quarter miler type?

CHAIRMAN SCHLADEMAN: No, the half-mile type of quarter miler.

FROM THE FLOOR: I would say yes, during the freshman or sophomore years, but when they get along near the top of the blue ribbon class, I don't believe I would run them in very much cross country.

COACH JOHNSON: I am talking about a boy that likes to run cross country and is willing to compete on a cross country team.

FROM THE FLOOR: It has a tendency to shorten his stride. That is the only thing against it.

COACH NICHOLSON: In that connection, I would say that Alex Wilson last year ran cross country in the Fall. I told him to keep a lot inside of himself, and he did that, and only ran one tough race during the year, in the rest taking fourth or fifth. He might have won most of them I think if he had wanted to.

Then he stopped and went out for the indoor season. He would run as hard as he had to, but never put himself out. During the year of the Olympics, instead of trying the half-

mile, which I knew he was best at, I told him to run the quarter which he did and won consistently.

The point was that he kept these races in him for the Olympics. He had a lot of running, but he never ran hard for time, and never ran for records except in the Olympics.

CHAIRMAN SCHLADEMAN: In other words, you can use cross country for a build up, but you can't use the middle distance man in a cross country run as a cross country runner?

COACH NICHOLSON: That is right.

FROM THE FLOOR: Hornbostel last Fall won every race he ran. Of course, it wasn't much effort for him, but he beat everybody he ran against three or four yards. And he is not such a bad runner now. (Laughter.)

CHAIRMAN SCHLADEMAN: Hornbostel is probably a very fair miler. He is quite a distance runner.

QUESTION: Does anybody know if Cunningham runs cross country?

COACH SCHULTE: He used to run the two-mile team race. Cunningham ran it last summer, but I don't think he warmed up or did any work for it. I don't think he had to.

COACH CONGER: We (Carleton College) hardly took a point in the middle west this year, so even though I may have run a little myself, I feel very weak on the coaching of it.

I have come to the conclusion myself that some of us do not keep as close track of what they actually do as we might. It might be that we are a little too lax in our own training too.

I can remember in the years when I was going the best, but I can't remember my own workouts. But I can remember that

the year I was best, I was running a lot of 300s.

At that time I was running at Columbia University under Carl Merner and he said to try the 300, rest a little while, run another 300, and some nights there would be as many as four 300 yard runs.

COACH JOHNSON: How fast did you run them?

COACH CONGER: I would put out all that I had in me, just the same as if I had been sprinting them.

That is another thing some of us are not doing, and that is keeping correct enough track of the actual speed of these things.

This year I tried to make up a chart. I put on this chart each man's name and what each man was to do each day. Then I put on the top line what he should do from what he did the day before, and when he came out he would immediately go to this chart and get his directions. This is partly due to the fact that I have to be in the zoology department until 4:00 o'clock, and then I have an hour and a half to attend to track, and I would not get down until those fellows were half done with their workouts. Therefore, I had to have this all written down each day what they were to do, and the times they were to do it in.

Some people say to run a quarter mile at three-quarters speed. I don't know what three-quarters speed is, and I don't think there are many runners that can tell the difference between three-fourths and seven-eighths speed and get it correct. That is why I put down the actual speed that I thought the runner should run it at.

I think the middle distance runner still needs a little over-distance work, so on Monday night there is a place down there for a half-miler to run a three-quarter mile at a quite comfortable speed.

Then on Tuesday night I would have them go to the 300-yard and 220-yard dashes, or very much shorter distances than what they were used to.

After these workouts they come in and put down what they actually did. If I told them to run a quarter mile at 58, and they run it in 47, they put it down. Then I keep these blanks filed so that I can go back over what a person has done two months before and see whether he did it faster than I suggested or slower than I suggested, or if he went extra good in one race I can check back and see whether I should bring him along the same way that he was previously, or how he should take his workouts, because I do feel very sorry that I do not have a record of the actual workouts of more men.

Briefly, you can say that I put a man on over-distance Monday night, under-distance on Tuesday, a little short of the distance on Wednesday night, or 880 or 660 at the same speed that you would like to have him finish the half; and then on Thursday night playing around, passing the baton, or things of that sort, just to break the monotony and on Friday night a rest, and Saturday the race. That is a week's workout which I feel is very good for most middle distance runners.

On these follows that cannot sprint at the finish, I have them finish every workout with a burst of speed. I like to think of middle distance running as sort of in this manner:

They begin the race with a good spurt to the first turn, and there seems to be sort of a lull, and then later you drive through a little bit faster, finally putting all you can get into it on the last part of the race.

Those of you that know my own running know that I could not respond very quickly to anything. Sometimes I didn't respond at all, and after somebody started by, instead of driving out right with them, I would have to stay in the same rut for a little while and then ease out a little bit faster. I always had a feeling that a person had to be cool and collected and not to do something before you give it at least a thought. The only time that I didn't give it a thought and went right out after the fellow as quickly as he went by, was in the Carlisle race in the east, and that night when he went by, instead of going on by myself and being cool and collected, I very quickly started after him and went by him, and about 60 yards from the tape I started seeing different colors, and he went by again. So I do have a feeling that most middle distance runners can't collect themselves and put on a burst of speed without feeling the results before they come to the finish.

As I say, everybody is different. Joie Ray was a type who took workouts that now suggest Cunningham's method; he would run a quarter, rest, run a faster quarter, rest, and so on. So that there again I think we should pay more attention to speed, especially in fellows that don't have a sprint at the finish, but they must always keep cool and collected. But I had one runner that kept too calm and collected so that he was sitting there on his marks and the rest of them

had started running, after he had been jumping the gun all year long. So there you go (Laughter).

CHAIRMAN SCHLADEMAN: What do you think about timing them between the quarters on the half?

COACH CONGER: The first quarter should be a little bit faster than the second quarter.

CHAIRMAN SCHLADEMAN: How much faster?

COACH CONGER: About a second.

CHAIRMAN SCHLADEMAN: What do the rest of you think about that?

QUESTION: How faster should the first 220 be than the second 220 on the quarter mile?

CHAIRMAN SCHLADEMAN: I believe that is a matter of the runner involved. In the case of the sprint type runner, I think he will go quite a bit faster on the first 220. If he is the distance running type, he is naturally going to be back in the field and keep turning on power all the way through.

FROM THE FLOOR: And it depends on the position he has drawn in the race.

FROM THE FLOOR: I know that the target that we used in the 1600 meter relay teams was 21.7 for the first.

I should think that there would be a second's difference on the half mile, and I think these good quarter milers should have at least two seconds' difference between their first 220 and their second 220.

COACH CROMWELL: Fuqua says he is going to try to run it in 22 and 24 today.

FROM THE FLOOR: I have a stop watch with two hands.

I have had it for the last 6 or 8 years and I have used it at all the meets, using the first hand to time at the end of the first 220, just to see what it was. I clocked this boy Bud Spencer in the quarter, in the 400 meter relay in 1928, at the Olympics, and he ran that first 220 almost 3 seconds faster than he did his second 220. And at the last Olympics the same thing happened. Those boys are almost three seconds faster in the first 220, and that is a lot of difference.

CHAIRMAN SCHNADEMAN: I think it depends a lot on the field. Whenever you have a good field you always have one fool in there who is going to upset the timing of the quarter mile, particularly if they do not run in lanes.

COACH CROMWELL: I can give you the figures that Eastman did at the time he made his world's record on the old track at Stanford. It was in a dual meet with the Los Angeles Athletic Club.

The fastest 220 that I knew that Eastman had ever run in a flat race when he was running the 220 yard dash, was 21.6 seconds. In this particular 440 - he was timed in 21.4 at the end of the 220 straight away. His next 220 was 25, and that made 46.4 which was a new world record.

That time showed that Eastman is distinctly a front runner. That is his type of running.

COACH HAMILTON: Mr. Cromwell, it would be interesting, if you have the figures, to compare Eastman's new record of 1:49.8, which will show, I think, a change in running policy that is for the best.

COACH CROMWELL: I think you are absolutely right

Coach Hamilton.

COACH HAMILTON: I think he hit the 660 mark at 1:18.6.

COACH CROMWELL: It was something like that. The first quarter was undoubtedly 51.8 or 51.5.

At the meet a week ago today, I heard the report over the radio of the gun and I timed it and it was approximately 54 seconds for the first 440, which would make his second one 55.8.

There is almost that even 2-second variation between the first quarter and the second quarter, showing that Eastman is evidently learning from Cunningham this thing of a steady even pace being more effective than a real burst of speed at the first half of the race.

COACH JOHNSON: In spite of the fact that you say he is a front runner?

COACH CROMWELL: He is a front runner, but he was conserving some energy, so that he was able to carry through.

FROM THE FLOOR: You have to have your boys ready for position. They cannot be shunted wide; they have to go out there and run and try to settle down.

We prepare them lots of times by fast quarters, knowing that is not the idea but if they want to stay in the race they have to be up there, and so they won't have to run wide. We prepare them by a little fast work, although we hope they won't have to do it.

COACH HAMILTON: I think this race for position is over-emphasized, and I would like to hear Mr. Cromwell tell us how Vic Williams used to run the quarter, which I think bears out the point we are trying to make.

COACK CROMWELL: Vic Williams always ran to win. He didn't care whether the time was going to be a new world's record or whether it was merely 50 seconds. If the front runner went out and ran too fast, he merely chose his position suited to his ability.

If the first 220 was run by Eastman in 21.4, he let Eastman go. It didn't make any difference to him. He kept his position, knowing that Eastman was going to come back very fast at sometime during the second 220. That was all. He himself was running that steady pace which we are talking about.

If you must get a position, and you have half a dozen runners in there that are all running wild and running too fast, why shouldn't there be one sensible man in that group, and let that man go ahead and run the race as it should be run, and probably the rest of them will all come to him and that man will win. Just because there might be seven men in there and six of them are running too fast is no reason why the seventh man should run bad; or if it is a seven-man race, and four of them are running too fast, why should the other three try to keep up with them and fight with them.

Suppose they are trying to run a half-mile, and they take the first quarter in 52. I imagine a number of you were at the Philadelphia A. C. A. A., where Phil Edwards went out to break the world's record, or at least the Inter-collegiate record, for the half-mile. He was going to break Ted Meredith's record. In trying to do that he ran the first quarter in 52.2 and had a tremendous lead at the end of the quarter, but he ran the last lap in 60, which made 1:52.2 for the race. I

think you will find that that was about the time.

Now, wouldn't Phil Edwards have been much better off if he had taken that first one in 54? Undoubtedly he would have come nearer approaching the record. I am sure he could have done it more easily and have probably beat his own record if he had run it at a more even pace.

FROM THE FLOOR: Here is what I am trying to get at: Say we have a field of 11 quarter-milers. Say you have Vic Williams in this race. We have 100 yards to finish in. The rest of them go out at a terrific clip. If he stays back in 11th place, he will have to do all of the running on the home stretch and he will be 12 or 14 yards back if he wants to stay close to the pole. He has run 440 yards and not 450 yards.

Now, can he afford, in that race, to run in 11th position and still hope to get up there in front?

COACH CROMWELL: How many of you were at Pittsburgh in 1930 for the National Championships? There were three heats in the 440 yard dash, three men to a heat, and nine in the finals.

They started the men, after a good shower had covered the track with water, in individual lanes. Vic Williams drew number 9 and was right up against the grandstand.

The race started in a straight line with Vic Williams ninth in a field of nine, the track covered with water.

They started with a tremendous burst of speed on the little short straightaway. Starting around the curve, Williams followed the rest of them for 50 yards and then dropped into

the pole and was sixth. He ran the way it should be run. He ran his same rate of speed that he always ran. They went down that long straight away and around that far curve with Williams running his same speedy pace. Around the curve he went into the home stretch in the third lane, and from that point on he went on with his usual burst of speed and won comfortably. The time was 48.8, and Williams had run perhaps 450 yards, but he had run the race the way it should have been run, and used good judgment of pace. And, remember, he was ninth in a field of nine with no staggered lanes, and running around an oval track.

His time wide open was barely better than 22 seconds. His comfortable race is about 23 seconds. Occasionally he ran 23 with the second one in 24, because we have timed him in 47.

QUESTION: If you have seven or eight lanes, would it be better to fall in line at the Pole, or stay out of it?

COACH CROMWELL: I would suggest that he use his own racing judgment.

COACH SCHLADENMAN: In the half-mile run my boy led at the first quarter, and was timed right in 56 seconds, and then when Cunningham came along side of him, with about 300 yards to go, I think he just sort of bowed down because it was Glenn Cunningham, whereas, if he had gone along with Cunningham and made Cunningham run a little faster before he took the lead, and swung on to Cunningham's elbow, he would have had no trouble at all. But he let Cunningham come along with two men on the outside and formed a natural pocket

and he never had a chance.

COACH CROMWELL: That was a case of bad racing judgment.

CHAIRMAN SCHLADEMAN: Part of it was bad racing judgment.

PRESIDENT CROMWELL: It is now ten minutes to twelve.

If there is nothing further, we will stand adjourned.

(Whereupon, at 11:50 o'clock a. m., the meeting was concluded.).

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